REMARKS

Claims 1, 2 and 7 are amended. Claims 1-15, as amended, remain in the application. No new matter is added by the amendments to the claims.

The Rejections:

In the Final Office Action dated March 23, 2006, the Examiner rejected Claims 1-15 under 35 U.S.C. 103(a) as being unpatentable over De Angelis (5,566,786) in view of Olesen, et al (4,956,039).

Regarding Claims 1 and 7, the Examiner stated that De Angelis discloses an elongated load-bearing support device (1) with load bearing strands (4), each having a plurality of fibers (5) of a base material in a first phase (aramid fibers (Col. 2, Line 38)) and the strands being surrounded by a sheath (7). The Examiner further stated that the reinforcing material of De Angelis is of a second phase, yet it is externally applied to the base material as "... an impregnating medium, for example polyurethane solution, for the protection of the fibers 5" (Col.3, Line 57) whereby a second phase is introduced into a first phase and the bending fatigue strength of the strands is increased. The Examiner noted that De Angelis adds, "Expediently, the individual strands can also be protected by a braided sleeve of polyester fibers" (Col. 3, Line 67).

The Examiner stated that Olesen, however, discloses the application of a thermoplastic sleeve that "...is preferably filled with reinforcement elements having a high modulus of elasticity..." (Col. 2, Line 60), as well as a core string comprising a thermoplastic material with filaments of "...preferably E-glass... S-glass... aramid or carbon...", the distribution of reinforcing material of one phase within a base material of another (second) phase is taught. Furthermore, since the objective of the Olesen reference was "...to provide a method or an apparatus for the economical manufacture of a cable-like synthetic composite body which satisfies the requirements of being able to bear relatively high tensile and compressive forces in every respect...", the Examiner is of the opinion that it would have been obvious to one of ordinary skill in the art to modify the base material of De Angelis with the teaching of Olesen, in order to gain the commercial and structural (performance) features of Olesen.

Regarding Claim 2, the Examiner stated that De Angelis discloses a plurality of fibers (5) formed into a cable (4 and, in total, 1).

With respect to Claims 3 and 8, The Examiner stated that though De Angelis discloses a base material (5) of aramid fiber and a reinforcing material comprising a polyurethane solution with which "each individual strand 4 is treated..." (Col. 3, Line 56), thereby increasing the modulus of elasticity of each strand in a radial direction (whereby each strand comprises fibers) he is silent regarding the treatment of the individual fibers. The Examiner further stated that Olesen, however, teaches a thermoplastic material that can be "...polypropylene filled with 20% E-glass staple fibers... (Col. 7, Line 7) whereby the glass fibers significantly increase the modulus of elasticity of each of the fibers in the longitudinal direction. Therefore, according to the Examiner, it would have been obvious to one of ordinary skill in the art to modify the invention of De Angelis with the teaching of Olesen, in order to provide a base material of superior tensile strength.

Regarding Claims 4 and 9, the Examiner stated that Olesen discloses a reinforcing material as "... staple fibers (23) of a high modulus of elasticity..." which is used to fill the base material (13) of thermoplastic material.

Regarding Claims 5 and 10, the Examiner stated that, as noted above, Olesen discloses a reinforcing material as "... staple fibers...", wherein staple fibers are understood to be short fibers.

Regarding Claim 6, the Examiner stated that De Angelis discloses that in "...another form or embodiment ...each individual strand 4 is provided with a separate, annular closed casing..." (Col. 4, Line 63).

Regarding Claims 11-15, the Examiner stated that the devices of Claims 1-10 would necessarily have to be formed in order to function. According to the Examiner, it would have been obvious to perform all the method steps of Claims 11-15 when producing the device of De Angelis as modified by Olesen above, in a usual and expected fashion, in as much as the method claims recite no limiting steps beyond producing each of the components.

Regarding Claim 11, the Examiner stated that De Angelis, again, discloses an elongated load-bearing support device (1) with fibers (5) from a base material in a first phase (aramid fibers) and a reinforcing material in a second phase ("... an impregnating medium, ...polyurethane solution), with the load-bearing strands (4) thereof being surrounded by a sheath (7).

Regarding Claim 12, the Examiner stated that De Angelis discloses a base material selected from aramid (5) and Olesen discloses a base material selected from a thermoplastic (preferably, but not limited to, polyethylene).

Regarding Claim 13, the Examiner stated that De Angelis discloses a reinforcing means by impregnation with a polyurethane solution to increase the bending fatigue strength of the base material, whereas Olesen teaches a reinforcing material as "... staple fibers (23) of a high modulus of elasticity..." which is used to fill the base material (13).

Regarding Claim 14, the Examiner stated that Olesen teaches a core string having a thermoplastic material with filaments of "...preferably E-glass... S-glass... aramid or carbon..." as well as the selection of "...staple fibers of glass, aramid or carbon..." as "reinforcing elements having a high modulus of elasticity".

Regarding Claim 15, the Examiner stated that Olesen teaches both the incorporation of "reinforcement elements... in particular staple fibers..." (Col. 2, Line 61) and that the staple fibers be of "... glass, aramid or carbon..." (Col. 4, Line 5), whereby staple fibers are understood to be short fibers.

The Response:

Applicant amended Claims 1, 2 and 7 to clarify that the strands comprise a plurality of the fibers.

In support of the rejection of Claims 1 and 7, the Examiner stated that De Angelis discloses an elongated load-bearing support device 1 with load bearing strands 4, each having a plurality of fibers 5 of a base material in a first phase (aramid fibers (Col. 2, Line 38)) and the strands being surrounded by a sheath 7. The Examiner further stated that the reinforcing material of De Angelis is of a second phase, yet it is externally applied to the base material for the protection of the fibers 5" (Col. 3, Line 57) whereby the bending fatigue strength of the cable 1 is increased. Applicant agrees that De Angelis shows an impregnating medium being in a second phase applied externally to the strands 4 that are twisted or laid out of the individual aramide fibers 5.

Applicant's Claims 1 and 7 recite that the strands are formed of load-bearing fibers of a base material being in a first phase and a reinforcing material being in a second phase. These

claims define a load-bearing support formed with the load-bearing strands surrounded by a sheath. The strands are made from a plurality of the load-bearing fibers formed of the base material being in the first phase and the reinforcing material being in the second phase and being distributed in the base material. De Angelis does not show or suggest load-bearing fibers wherein reinforcing material being in a second phase is distributed in the base material being in a first phase as recited in Claims 1 and 7. The De Angelis second phase material is applied externally to the strands and is not distributed in the fibers. (Col. 2, Lines 16-18; Col. 3, Lines 56-59)

The Examiner stated that Olesen, however, discloses the application of a thermoplastic sleeve that "...is preferably filled with reinforcement elements having a high modulus of elasticity..." (Col. 2, Line 60), as well as a core string comprising a thermoplastic material with filaments of "...preferably E-glass... S-glass... aramid or carbon...", such that the distribution of reinforcing material of one phase within a base material of another (second) phase is taught. The Examiner is of the opinion that it would have been obvious to one of ordinary skill in the art to modify the base material of De Angelis with the teaching of Olesen, in order to gain the commercial and structural (performance) features of Olesen.

However, Olesen doesn't teach distributing reinforcing material in the load-bearing fibers as recited in Applicant's claims. Olesen discusses the introduction of short reinforcement elements **23** in the second thermoplastic sleeve **13** of the cable, which sleeve does not comprise the load-bearing fibers **11**, but is merely a sheath of the cable. The reinforcements **23** do not modify the mechanical properties of the load-bearing fibers **11** or even of the second thermoplastic sleeve **13**. They simply help to achieve a more intimate contact between the first and the second thermoplastic material during the extrusion process (see Col. 2, Lines 56-66; Col. 3, Lines 7-16; Col. 7, Lines 16-22), since these reinforcements partially penetrate from the second into the first thermoplastic material.

Thus, all that Olesen teaches is the placing the short reinforcement elements in a sleeve of a cable. One of ordinary skill in the art would apply the teaching of Olsen to the elevator cables of De Angelis by introducing the reinforcements into the cable sheathing **2**, but not into the load-bearing fibers **5** of the cable. There is no teaching in either De Angelis or Olesen of a support device with load-bearing fibers consisting of at least two phases.

The introduction by Applicant of two phases in the fibers of the elevator cable increases the travel comfort and safety. In particular, the following disadvantages are eliminated: the short service life of the cable, the low modulus of elasticity of the cable, the undesired elongation of the cable and the troublesome oscillations of the lift set in motion (see Page 3, Lines 2-8). The improvement of the mechanical properties is caused by the new phase introduced in the bulk of the load-bearing fiber.

The patents cited by the Examiner do not disclose any new phase introduced in the bulk of the fiber. The fibers disclosed in both prior art documents consist of only one phase.

The Examiner stated that Applicant's arguments filed February 6, 2006 have been fully considered but they are not persuasive.

The Examiner noted that the load-bearing fibers of De Angelis, comprising a first phase, are treated by "... an impregnating medium..." comprising a second phase, whereby the bending fatigue strength of the combined fibers is increased. The Examiner assumed that, furthermore, through impregnation, the fibers of his invention are saturated or infused with his reinforcing material, polyurethane, thereby introducing the reinforcing material into the fibers. However, both the quoted statement and the assumption by the Examiner are incorrect. With respect to the Examiner's statement, the individual fibers 5 of De Angelis are not treated. The impregnating medium is applied to the strands 4 (Col. 3, Lines 56-59). Furthermore, the Examiner admits that De Angelis "is silent regarding the treatment of the individual fibers." (Final Office Action, Page 3, ¶ 2)

Also, there is no disclosure in De Angelis that the impregnating medium enters the individual fibers 5 or that the individual fibers "are saturated or infused with his reinforcing material, polyurethane, thereby introducing the reinforcing material into the fibers." De Angelis teaches that the impregnating medium, for example a polyurethane solution, is applied to the strands 4 for the protection of the fibers 5. (Col. 3, Lines 57-59) Applicant requests that the Examiner identify any support in De Angelis for the proposition that the impregnating medium enters the fibers 5.

In summary, the De Angelis and Olesen patents cited by the Examiner do not disclose any new phase introduced in the bulk of the fiber. The fibers disclosed in both prior art documents

consist of only one phase. Therefore, the claimed invention would not be obvious to one of ordinary skill in the art.

The Examiner stated that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The Examiner cited Tatsuyoshi (JP 02-133631), McCullough (6,544,645) and LaNieve et al (6,162,538) for a composite fiber of nylon material with reinforcing elements comprising metal filaments, a fiber reinforced aluminum matrix composite wire, wherein the aluminum matrix comprises a single phase aluminum state, and a fiber-forming polymer having a filler material of metallic or non-metallic particulates, respectively. Applicant reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in the rejections.

In view of the amendments to the claims and the above arguments, Applicant believes that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.